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Attorney. Docket: 1302-388 (RD27764-3)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANT(S): Carter et al. EXAMINER: Timothy J. Kugel
SERIAL NO.: 10/797,394 GROUP ART UNIT: 1712
FILED: March 8, 2004 DATED: March 20, 2008
FOR: STABILIZED POLYORGANOSILOXANE COMPOSITION

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SECOND REPLY BRIEF

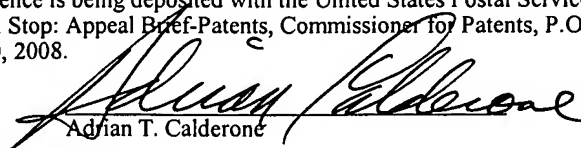
Sir:

This second Reply Brief is being filed in response to the second Examiner's Answer dated February 27, 2008. Consideration of this second Reply Brief is respectfully requested.

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Dated: March 20, 2008


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Status of Claims

Claims 1 to 39 are pending in this application.

Claims 1, 14, 18, 19, 33 and 34 are rejected.

Claims 2-13, 15-17, 20-32 and 35-39 are withdrawn from consideration.

The claims on appeal are claims 1, 14, 18, 19, 33 and 34.

Ground of Rejection to be Reviewed on Appeal

The issue raised by the rejection is as follows:

Whether the claims on appeal are properly rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,013,729 (hereinafter, “Tsujimoto et al.”) in view of Publication No. WO/96/16110 (hereinafter, “Karrer”).

Argument

In response to the second Examiner's Answer, Appellants herein wish to amplify arguments previously made in view of the fact that the arguments in the second Examiner's Answer substantially reiterate the arguments made in the first Examiner's Answer.

In Appellants' first Reply Brief it was argued that the Tsujimoto et al. reference has been mischaracterized by the Examiner. First, the Examiner has mistakenly equated the hydrocarbon rubbers of Tsujimoto et al. with polyorganosiloxanes. Second, the hydridosiloxanes of Tsujimoto et al. are confused with vinylsiloxanes. Third, vinylsilanes are mistaken to be vinylsiloxanes. These are factual errors with respect to chemical structures. One skilled in the art would realize that the structures disclosed in the Tsujimoto et al. primary reference are not similar to, or even suggestive of, the claimed composition of Appellants herein. All of the arguments of Appellants' first Reply Brief are incorporated herein and reiterated with equal force and effect.

In paragraph (10) of the Examiner's second Answer the Examiner states:

“Appellant argues that Tsujimoto fails to teach an organopolysiloxane as claimed since Tsujimoto teaches an elastomeric component – particularly an ethylene- α -olefin diene copolymer – crosslinked with a silicone type crosslinking agent; however the cross-linking taught – specifically compounds II-2 and II-3 (column 4 line 36 – column 6 line 3) meet the limitations of the instant claims and the ethylene- α -olefin diene copolymer, since it does not contribute alternating cyclic hydrocarbon residues meets the limitation of ‘polyorganosiloxane.’”

The statement by the Examiner “the ethylene- α -olefin diene copolymer, since it does not contribute alternating cyclic hydrocarbon residues meets the limitation of ‘polyorganosiloxane’” is a serious, plain and clear factual error. Polyorganosiloxanes are polymeric structures having a backbone of alternating atoms of silicon and oxygen with the unsatisfied valences of the silicon

atoms typically satisfied by hydrocarbon radicals. The ethylene- α -olefin diene copolymer is a polymer composed of hydrogen and carbon and nothing else. An ethylene- α -olefin diene copolymer by itself does not contain any silicon or oxygen atoms. For the Examiner to argue that an ethylene- α -olefin diene copolymer, which is composed solely of carbon and hydrogen, meets a limitation that requires a polymeric structure having a backbone of alternating atoms of silicon and oxygen is to assume a position contrary to elementary principles of chemistry.

In contrast to the teachings of Tsujimoto et al., the polyorganosiloxanes of the present invention are silicones crosslinked with silicones. One skilled in the art would not consider the hydrocarbon polymer based resins of Tsujimoto et al. to be equivalent to polyorganosiloxanes as contemplated by Appellants, or even in the same field of art. The Examiner cites *In re Bigio*, 72 USPQ2d 1209 (Fed. Cir. 1993) in support of the characterization of Tsujimoto et al. as analogous art under findings of essentially the same function and structure. However, the Tsujimoto et al. composition of hydrocarbon polymer crosslinked with a minor amount of siloxane does not have the same structure as a polyorganosiloxane. Nor is there any evidence that the Tsujimoto et al. composition and Appellants' claimed composition are in any way functionally equivalent or interchangeable. To equate the hydrocarbon rubber based polymer with polyorganosiloxanes constitutes a factual error which undermines any legal conclusion drawn therefrom. Arguments based on misconstrued chemistry do not make out a *prima facie* case for anything, much less a *prima facie* case for obviousness.

As explained in Appellants' first Reply Brief, the Examiner's comments about the open-ended transitional language of Appellant's claims are simply inapposite.

The error is further compounded with respect to separately grouped claim 14 wherein Appellants' polyorganosiloxane is defined as the reaction product of a non-cyclic vinylsiloxane fluid and an organohydrogensiloxane crosslinker. Tsujimoto et al. teaches the reaction product of a hydrocarbon rubber with a linear organohydrogensiloxane crosslinker. (Tsujimoto et al., col. 5). However, the linear organohydrogen siloxane crosslinkers are not vinylsiloxanes. The hydridosiloxanes (col. 5) possess monovalent R groups, which can be alkyl, alkoxy, phenyl, aryl, or aryloxy. The non-cyclic R groups are saturated, not alkenyl. Vinyl groups are not included in the listing of possible groups. There is a vast structural, and chemical difference between $-H$, $-C_nH_{2n+1}$ alkyl groups, alkoxy groups, etc. on the one hand, and $-CH=CH_2$ vinyl groups on the other hand. The structures and chemistry are different and equating them constitutes clear factual error.

Tsujimoto et al. teaches the grafting of vinylsilanes onto hydrocarbon polymer rubber base resin. (Col. 8, lines 9-22). However, the vinylsilanes do not qualify as vinylsiloxanes. Silanes have a single silicon atom and are therefore monomeric. Siloxanes possess at least two silicon atoms connected by an oxygen atom and therefore are at least dimeric, trimeric, oligomeric, or polymeric. There is no teaching cited by the Examiner that the vinylsilanes of Tsujimoto et al. are interchangeable with vinylsiloxanes. To equate the vinylsilanes of Tsujimoto et al. with the vinylsiloxanes of Appellants' claims constitutes a clear factual error of chemistry. Accordingly, claim 14 is even further distinguishable over Tsujimoto et al.

3. Claim 18

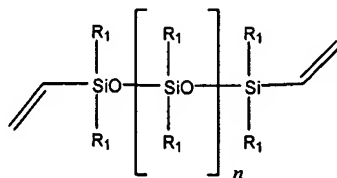
With respect to separated grouped claim 18, the Examiner's Answer states:

Appellant still further argues that the vinylsiloxanes of claim 18 does not contain alkoxy groups; however, in the siloxane of Tsujimoto, alkoxy groups may be present, but are not required and therefore the reference meets the claims.

The Examiner's Answer is correct insofar as the linear organohydrogen siloxanes listed in column 5 of Tsujimoto et al. possess R groups which do not necessarily have to be alkoxy. However, as stated above, none of the R groups is disclosed as being a vinyl group. Accordingly, the linear organohydrogen siloxanes of Tsujimoto et al. are not vinylsiloxanes or equivalent thereto.

Also, as stated above, the vinylsilanes of column 8 of Tsujimoto et al. are not vinylsiloxanes or equivalent thereto.

Moreover, the recitations in claim 18 are directed to a vinylsiloxane fluid having a specific structure:



which is neither disclosed nor suggested by Tsujimoto et al., nor does Tsujimoto et al. disclose the recitations directed to the value of n such that the viscosity of the composition falls within a range of between about 100 centipoise and about 200,000 centipoise at 25°C.

Additionally, Appellants have explained in the specification why the present invention is unexpectedly useful as a light bulb coating material. Referring to paragraphs [0008]-[0009] the specification states:

Historically, HALS were not suggested for use with silicones because of the concern that amines will poison a cure catalyst and thus inhibit the crosslinking reaction. Additionally, it has been believed that nonoxidative cycloreversion rather than oxidation is the predominant mode of polyorganosiloxane degradation at elevated temperatures. A HALS is an antioxidant. Cycloreversion is not influenced by oxygen. Hence, it has been believed that antioxidant HALS would be ineffective with polyorganosiloxanes.

Surprisingly, it has been found in accordance with the present invention that organopolysiloxane compositions can be stabilized with a HALS, or a modified HALS. While applicants do not intend to be bound by the following explanation, it is believed that both cycloreversion and oxidation occur simultaneously at elevated temperatures. However, oxidation appears to be the predominant mechanism at temperatures greater than 185°C. in an atmosphere containing oxygen. These conditions are the usual conditions for use of polyorganosiloxanes as a bulb coating.

Accordingly, at the conditions under which the composition of the present invention is intended to be used it would not at all be obvious to combine a HALS with a polyorganosiloxane.

In any case, the Karrer reference adds nothing which would cure the deficiencies of the Tsujimoto et al. reference as indicated above. Even if these references were to be combined the presently claimed invention would not be disclosed or suggested.

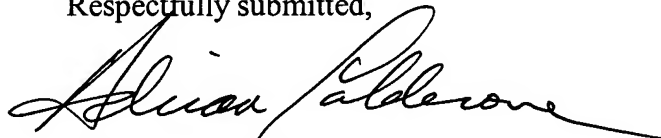
CONCLUSION

In summary, the rejection of Appellants' claims is based on clear factual and reversible errors on at least three points:

- equating siloxane crosslinked hydrocarbon rubbers with polyorganosiloxanes,
- equating hydridosiloxanes having only saturated linear groups with vinylsiloxanes, and
- equating vinylsilanes with vinylsiloxanes.

Appellants respectfully submit that all of the claims are allowable over the cited prior art. Reversal of the rejection by the Board is respectfully requested.

Respectfully submitted,



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